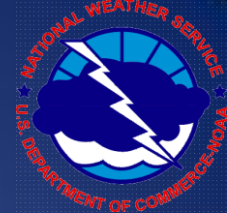


**May 12, 2009
Partner Meeting**

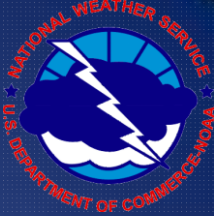
**National Weather Service
September 2008
Flood Event Summary**

**Christopher Daniels, NWS Midland, TX
Jason Johnson, NWS San Angelo, TX**



Northern Mexico Rio Conchos Basin





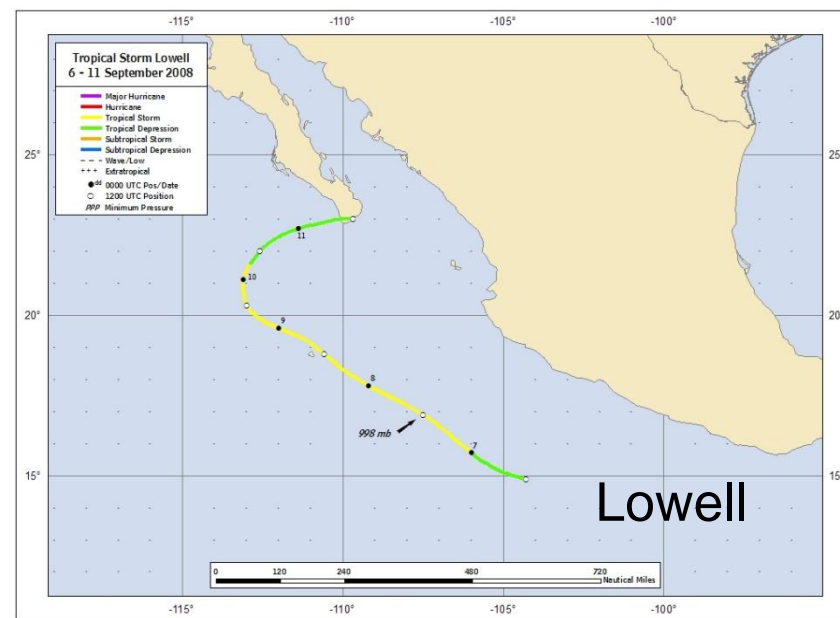
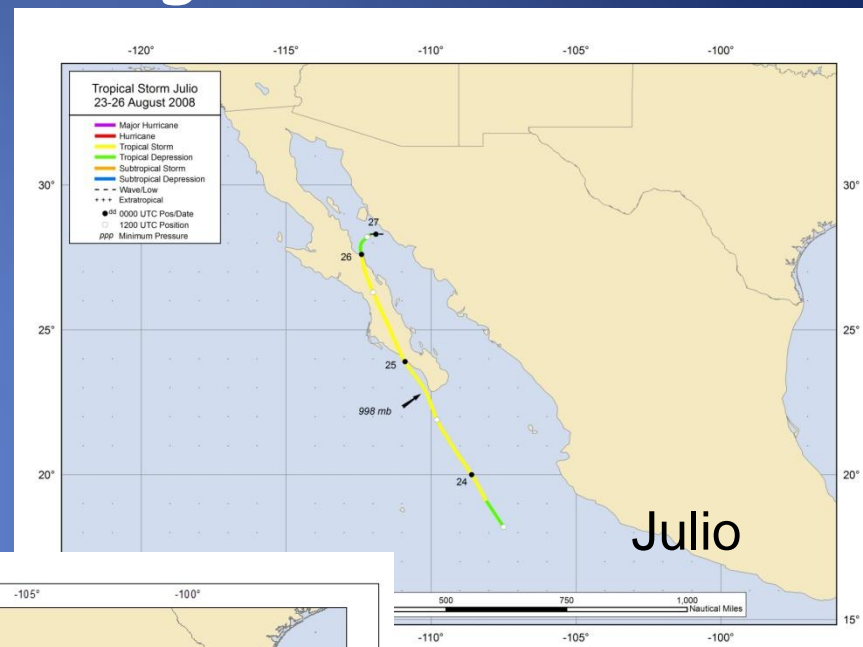
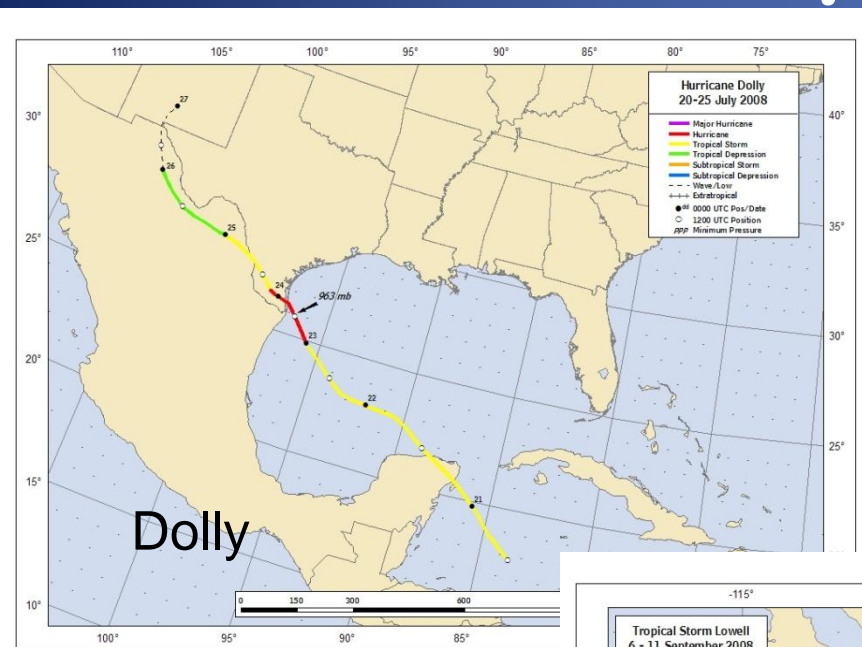
Flood Event Summary

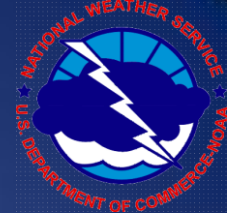
Monsoon pattern generally sets up late May / early June in southwest Mexico.

By mid to late summer, thunderstorms increase over the “core” region of the southwest U.S. and northwest Mexico.



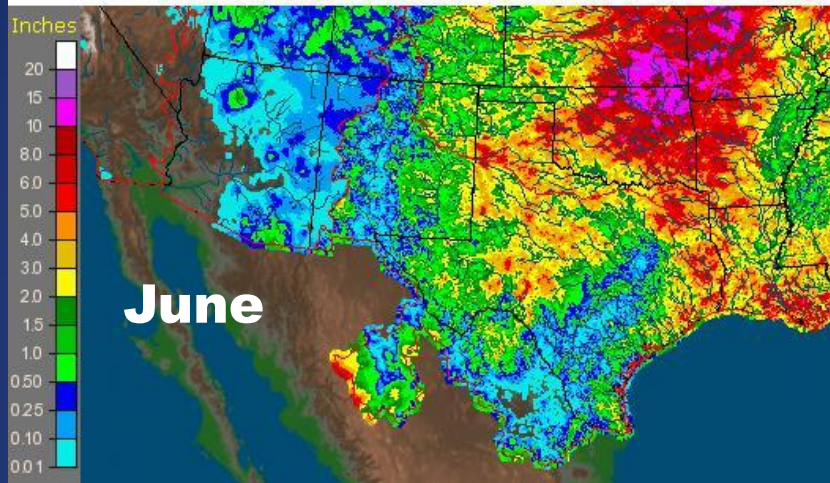
2008 Tropical Systems



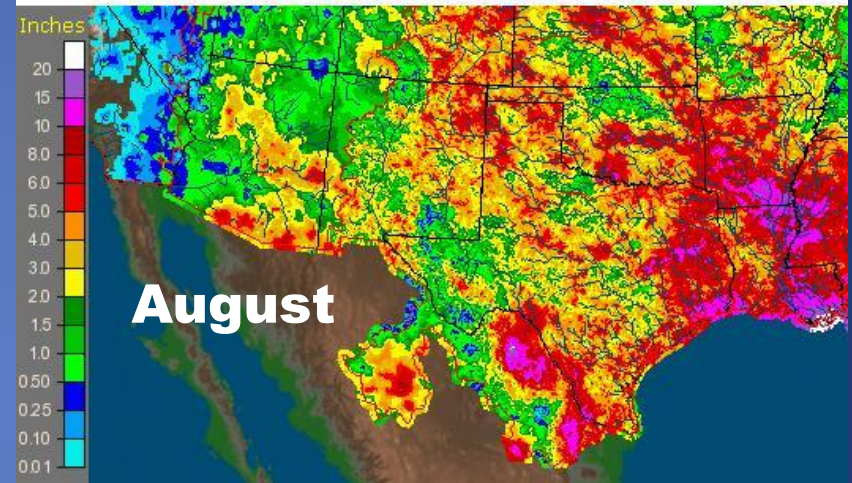


Rainfall Analysis

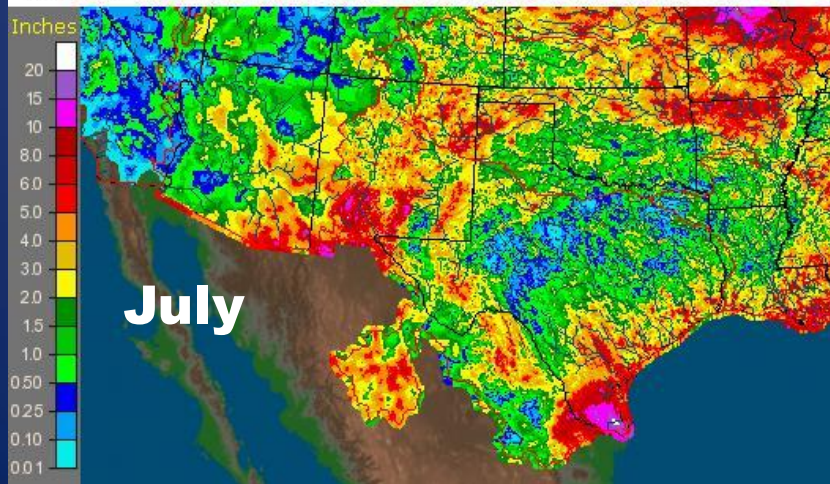
West Gulf RFC Ft Worth, TX: June, 2008 Monthly Observed
Precipitation
Valid at 7/1/2008 1200 UTC- Created 7/1/08 22:45 UTC



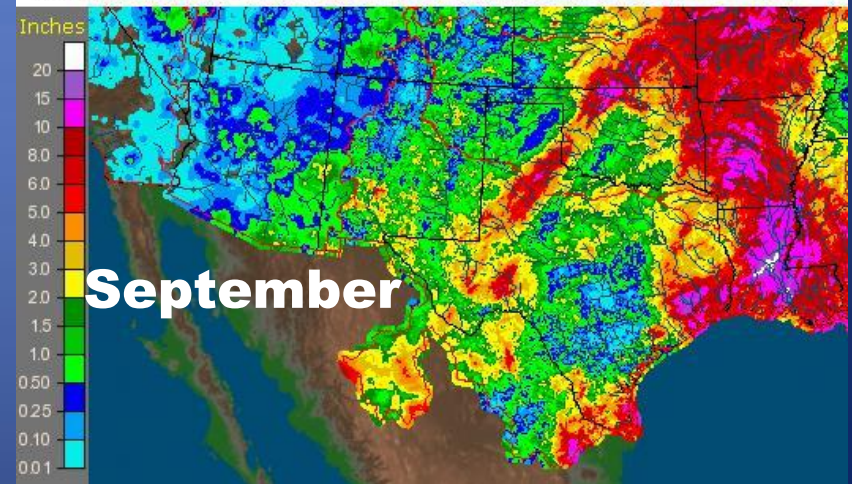
West Gulf RFC Ft Worth, TX: August, 2008 Monthly Observed
Precipitation
Valid at 9/1/2008 1200 UTC- Created 9/1/08 22:46 UTC

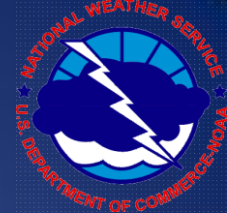


West Gulf RFC Ft Worth, TX: July, 2008 Monthly Observed
Precipitation
Valid at 8/1/2008 1200 UTC- Created 8/1/08 22:44 UTC



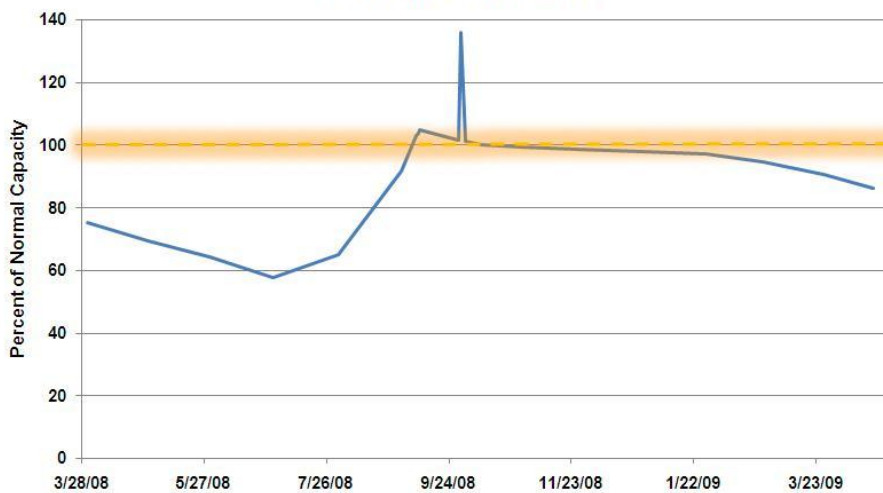
West Gulf RFC Ft Worth, TX: September, 2008 Monthly Observed
Precipitation
Valid at 10/1/2008 1200 UTC- Created 10/1/08 22:45 UTC



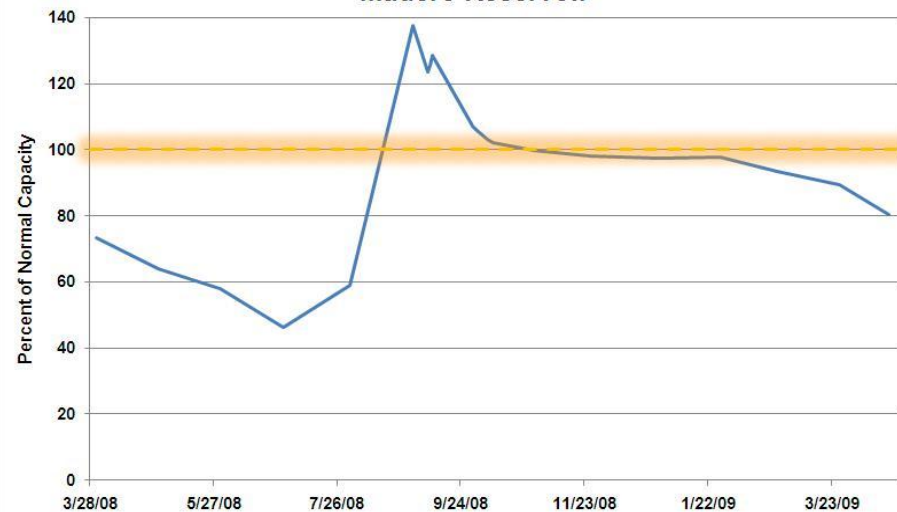


MX Reservoirs

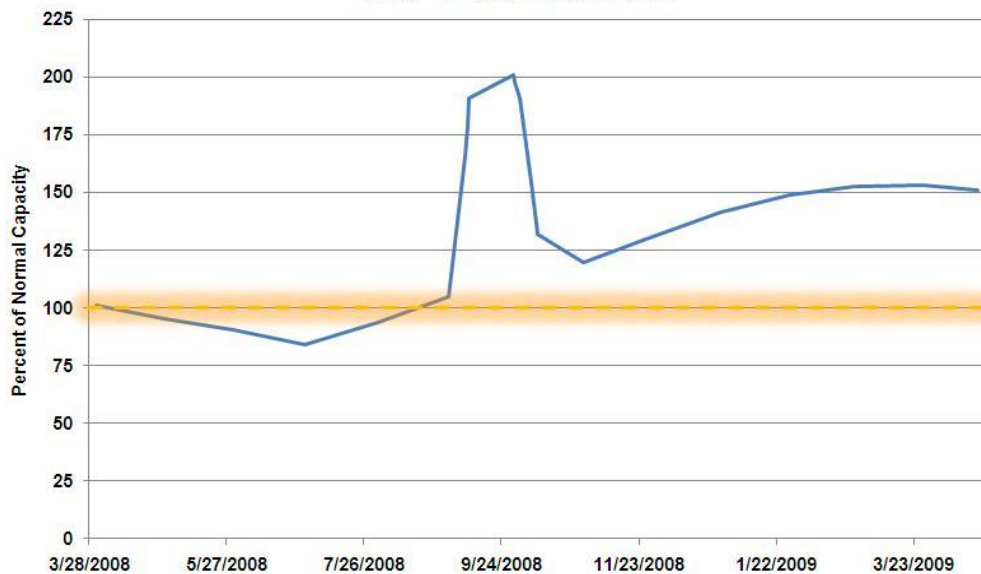
La Boquilla Reservoir

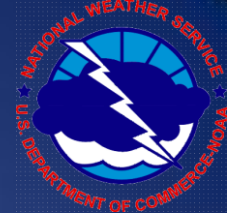


Madero Reservoir



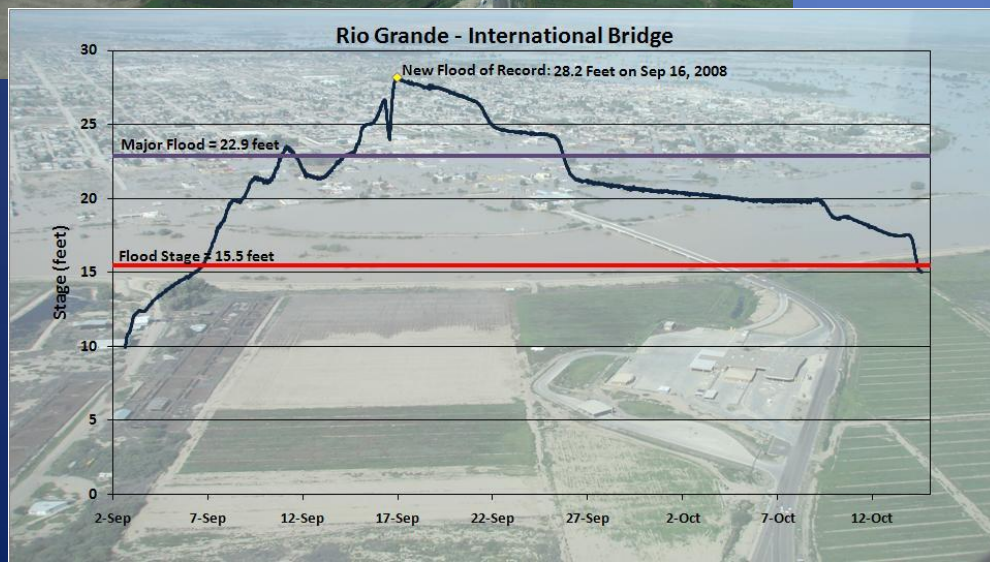
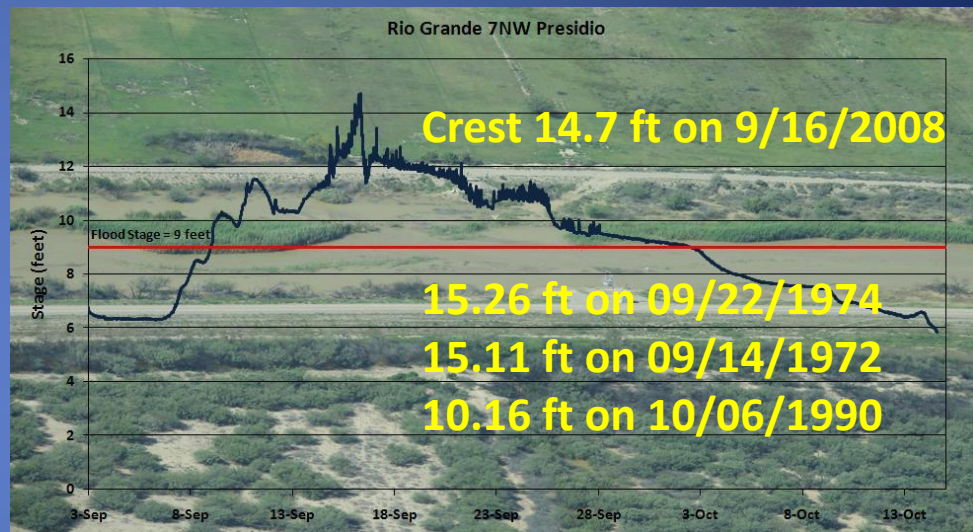
Luis L Leon Reservoir





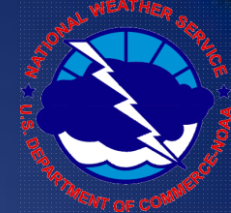
Flooding

Rio Conchos and Rio Grande



Crest 28.2 ft on 9/16/2008

25.84 ft on 09/30/1978
23.61 ft on 08/06/1978
23.23 ft on 09/26/1991
20.82 ft on 09/30/1974
20.70 ft on 10/22/1990

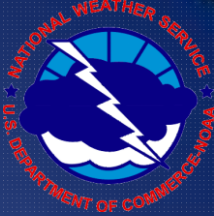


Rio Grande Flooding

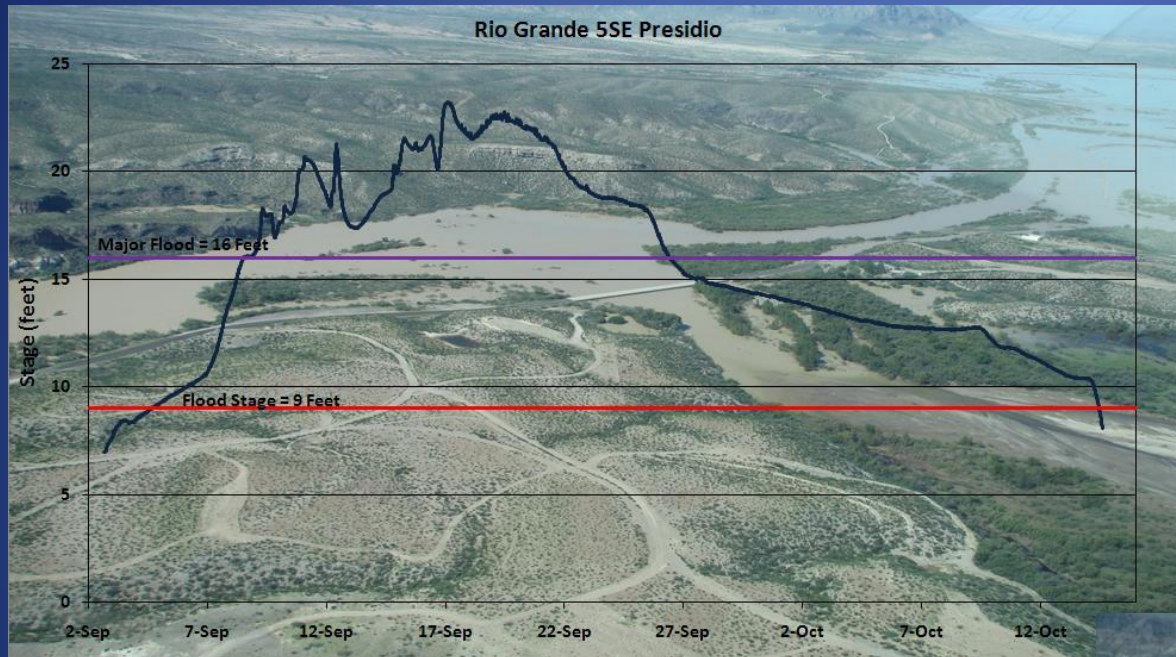


Rio Grande flooding - Presidio School (blue roof top).
RG_09_20_08 068





Rio Grande Flooding



Crest 23.2 ft on 9/17/2008

26.70 ft on 09/11/1904

21.26 ft on 09/22/1958

18.21 ft on 10/02/1932

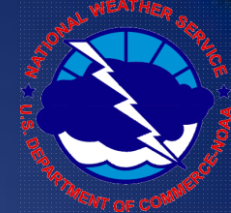
16.00 ft on 09/26/1991

15.41 ft on 09/30/1978

13.89 ft on 07/28/2004

13.88 ft on 10/03/1990





Rio Grande Flooding



Rio Grande looking upstream from near entrance to Big Bend Ranch State Park.



Rio Grande near Redford



El Mulato Diversion



RR 170 flooding



Rio Grande Flooding

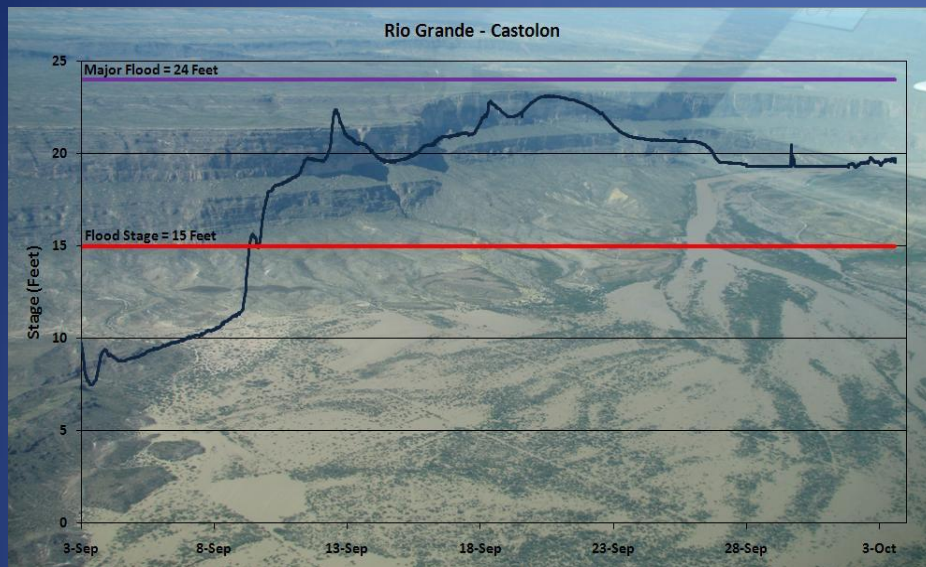
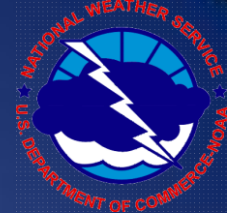


Rio Grande at Lajitas





Rio Grande Flooding



Crest 23.1 ft on 9/20/2008

21.30 ft on 09/30/1978

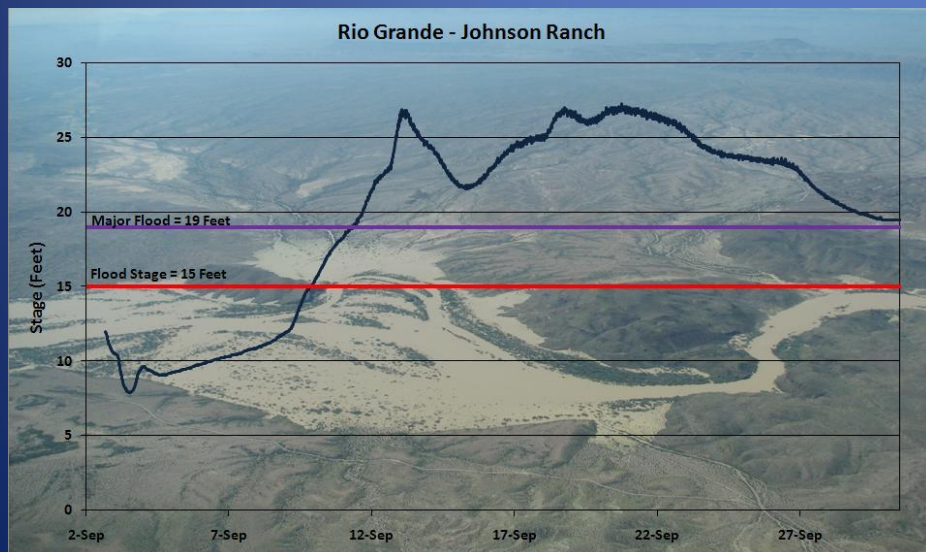
21.15 ft on 09/21/1974

19.65 ft on 09/10/1974

19.00 ft on 10/03/1990

18.50 ft on 10/11/2003

18.40 ft on 09/27/1991



Crest 27.3 ft on 9/20/2008

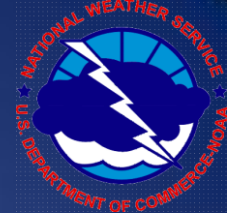
28.40 ft on 09/30/1978

27.27 ft on 09/20/2008

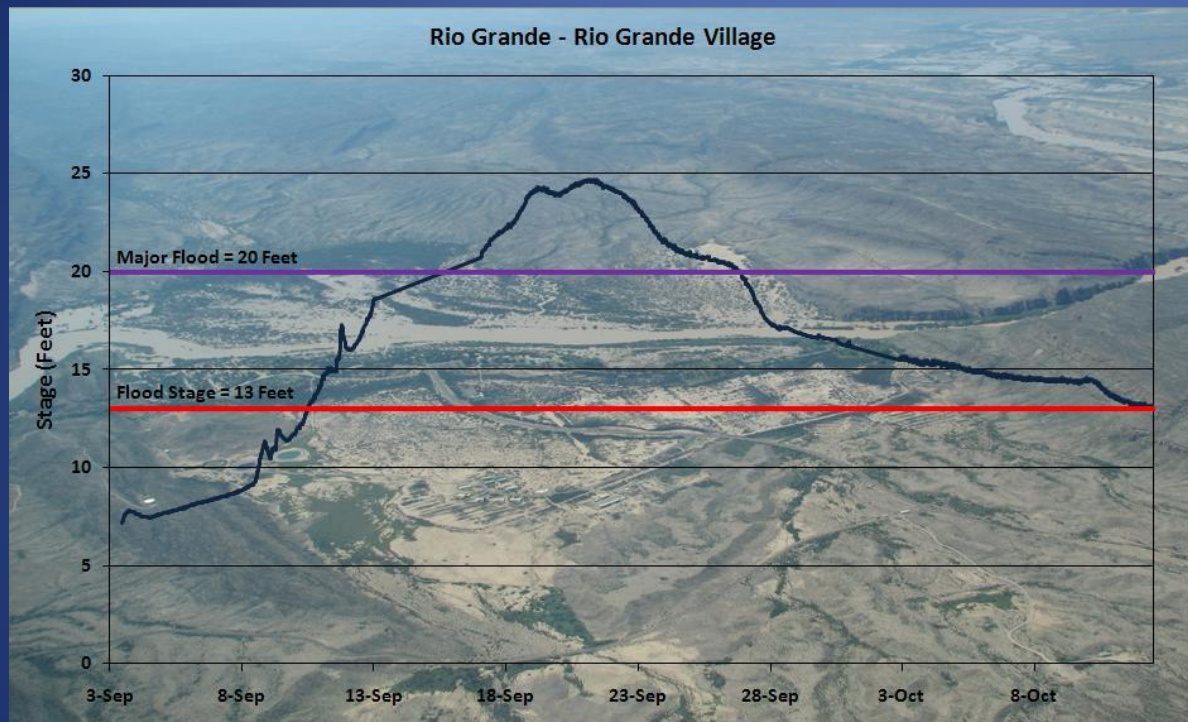
26.38 ft on 10/03/1990

22.38 ft on 09/29/1991

19.46 ft on 10/12/2003



Rio Grande Flooding



Crest 24.69 ft on 9/21/2008

25.50 ft on 10/03/1978

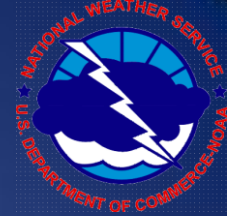
21.00 ft on 10/03/1990

17.50 ft on 09/29/1991

17.00 ft on 10/11/2003

17.00 ft on 09/18/1974

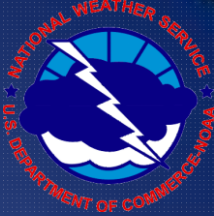
14.87 ft on 08/29/2008



Rio Grande Flooding

- Last Flood Warning expired on October 19
- Lost all staff gages (3 sites)
- Coordinating with USGS to install staff gages at Castolon and Rio Grande Village
- Staff gage at Lajitas partially installed

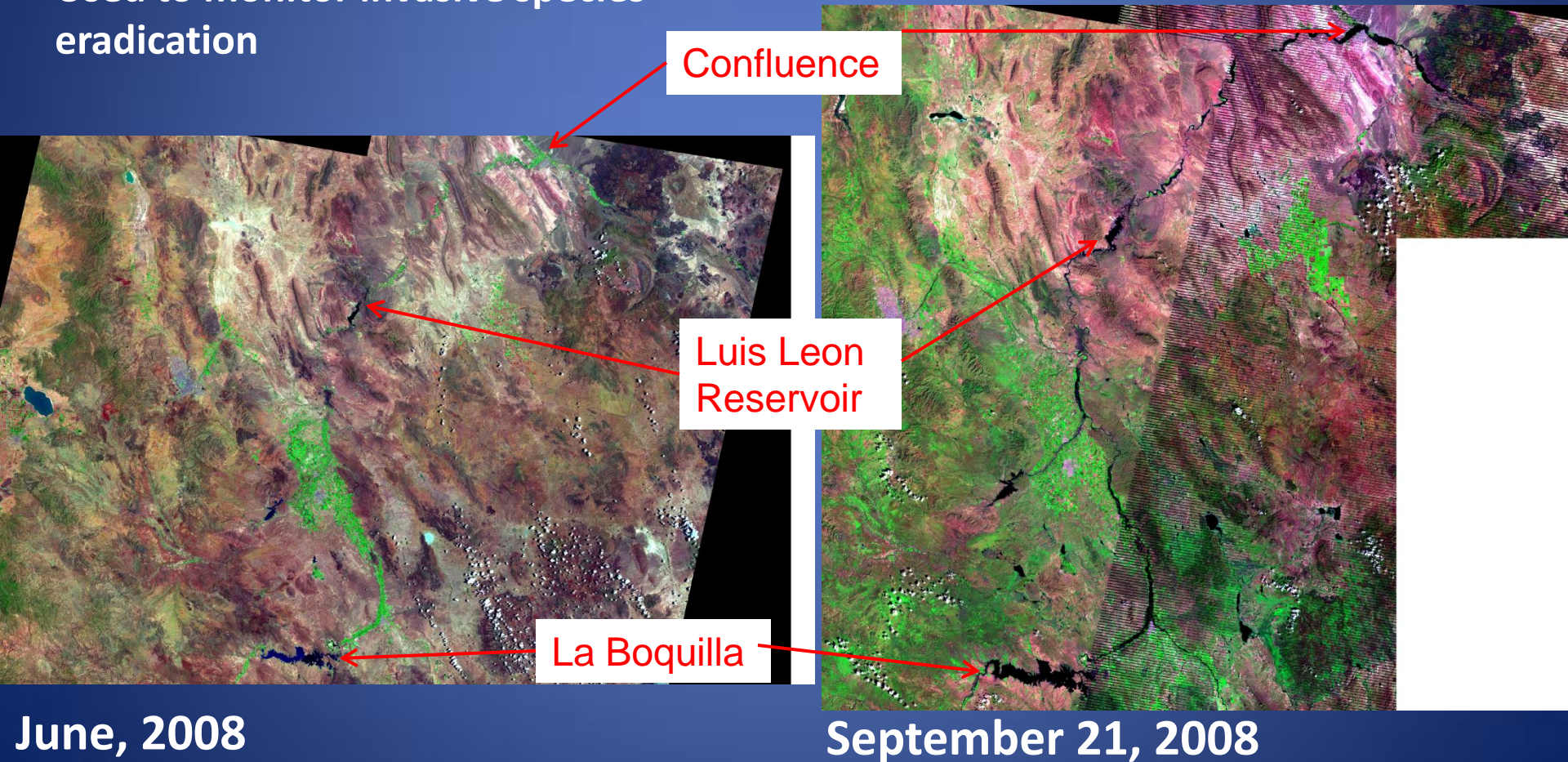


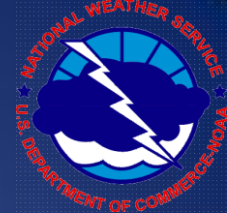


Landsat Data

Center for Space Research, UT Austin

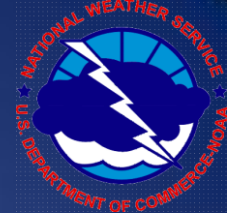
- Used to monitor extents of irrigated cropland
- Used to monitor invasive species eradication





Lessons Learned

- Difficult to Forecast Record Flooding
- Rainfall limitations
- Monitor MX reservoirs but can not predict reservoir operations
- Loss of staff gages and automated gages
- Channel, banks and overbanks have changed considerably as flood waters receded – impacts to ratings
- ?
- Partner Meetings laid groundwork for coordination
- Post flood data and resources available
- Flooding info/pictures contributed by partners
- Aerial surveys
- ?



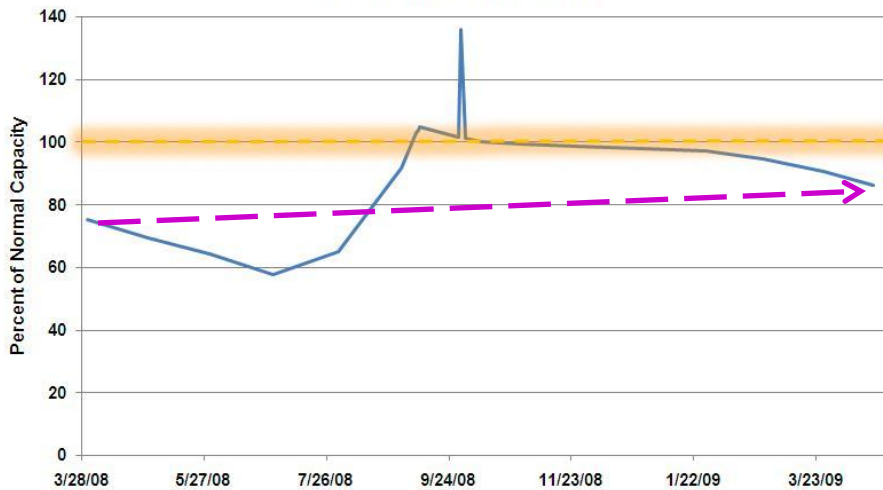
Moving Forward / Improvement

- **Coordination meetings – gather feedback**
- **Document impacts / update records**
- **Continue to explore information dissemination possibilities**
- **Build / Strengthen partnerships**

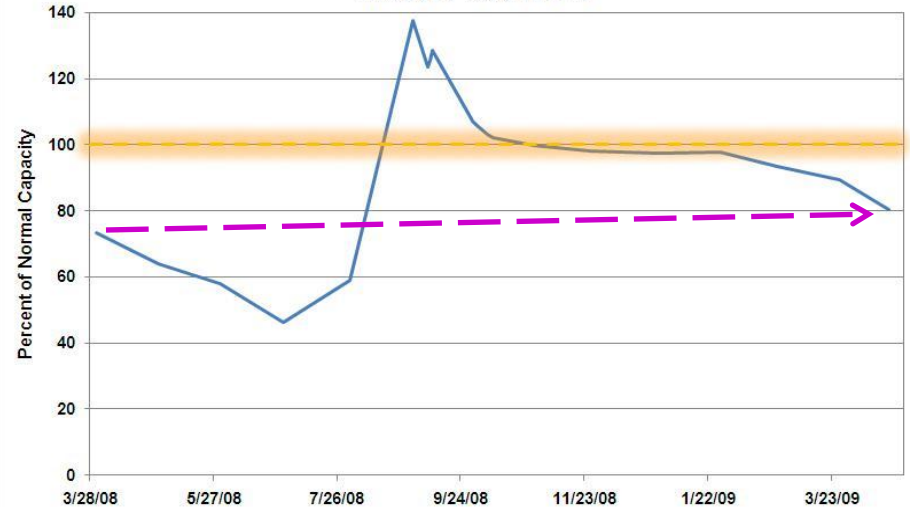
Because...

MX Reservoirs

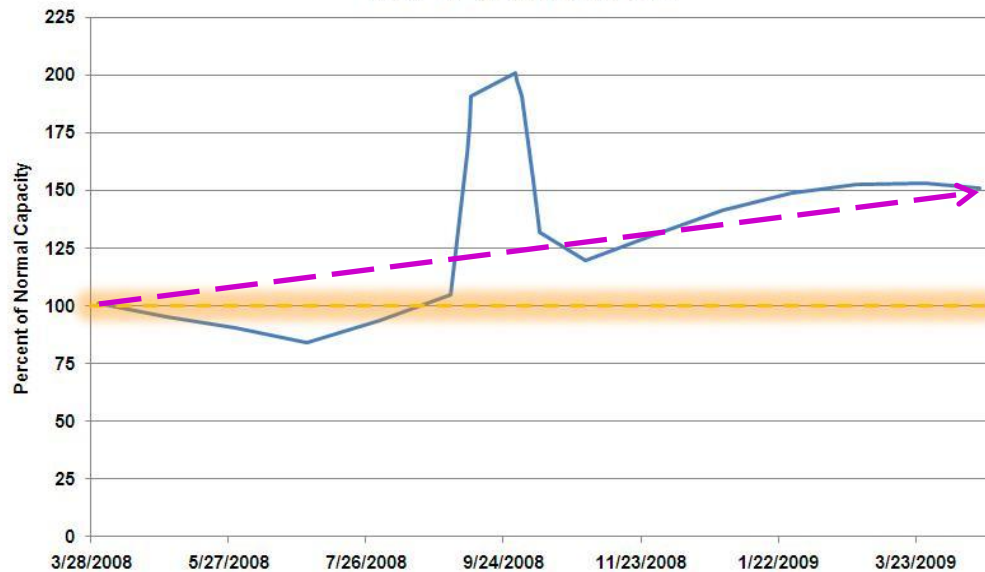
La Boquilla Reservoir



Madero Reservoir

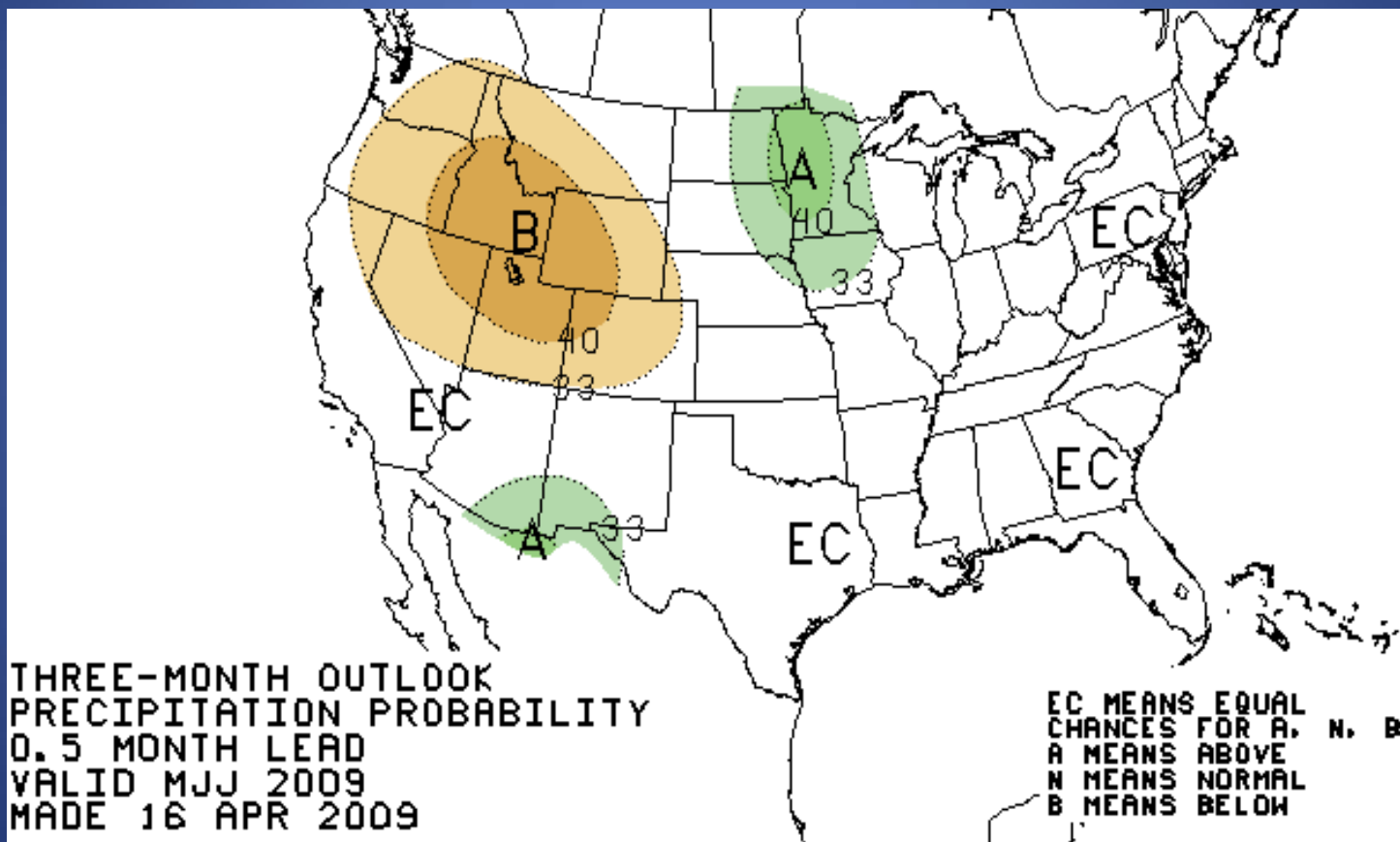


Luis L Leon Reservoir



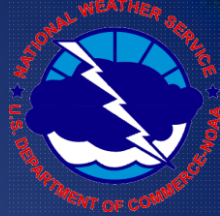
Storing more water
going into 2009
monsoon / tropical
season compared to
last year.

Climate Prediction Center Three Month Outlook

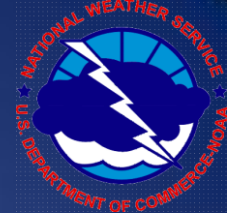




What is Being Predicted and Why?



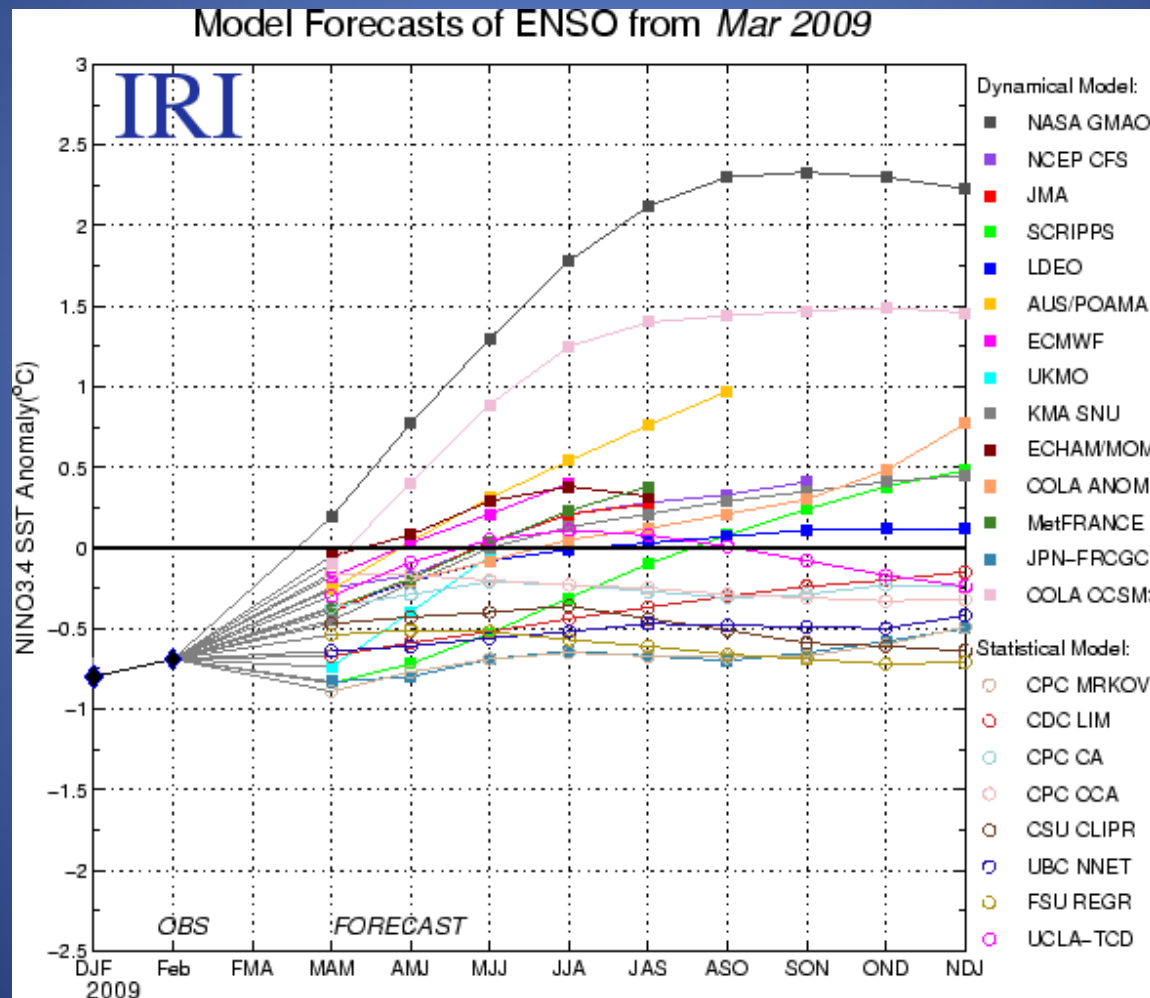
- Dr. Gray is predicting a near average Atlantic hurricane season
- Average hurricane season is 12 named storms
- Possible development of La Nina conditions
- Cooler Atlantic sea surface temperatures

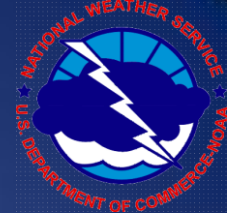


ENSO Forecast

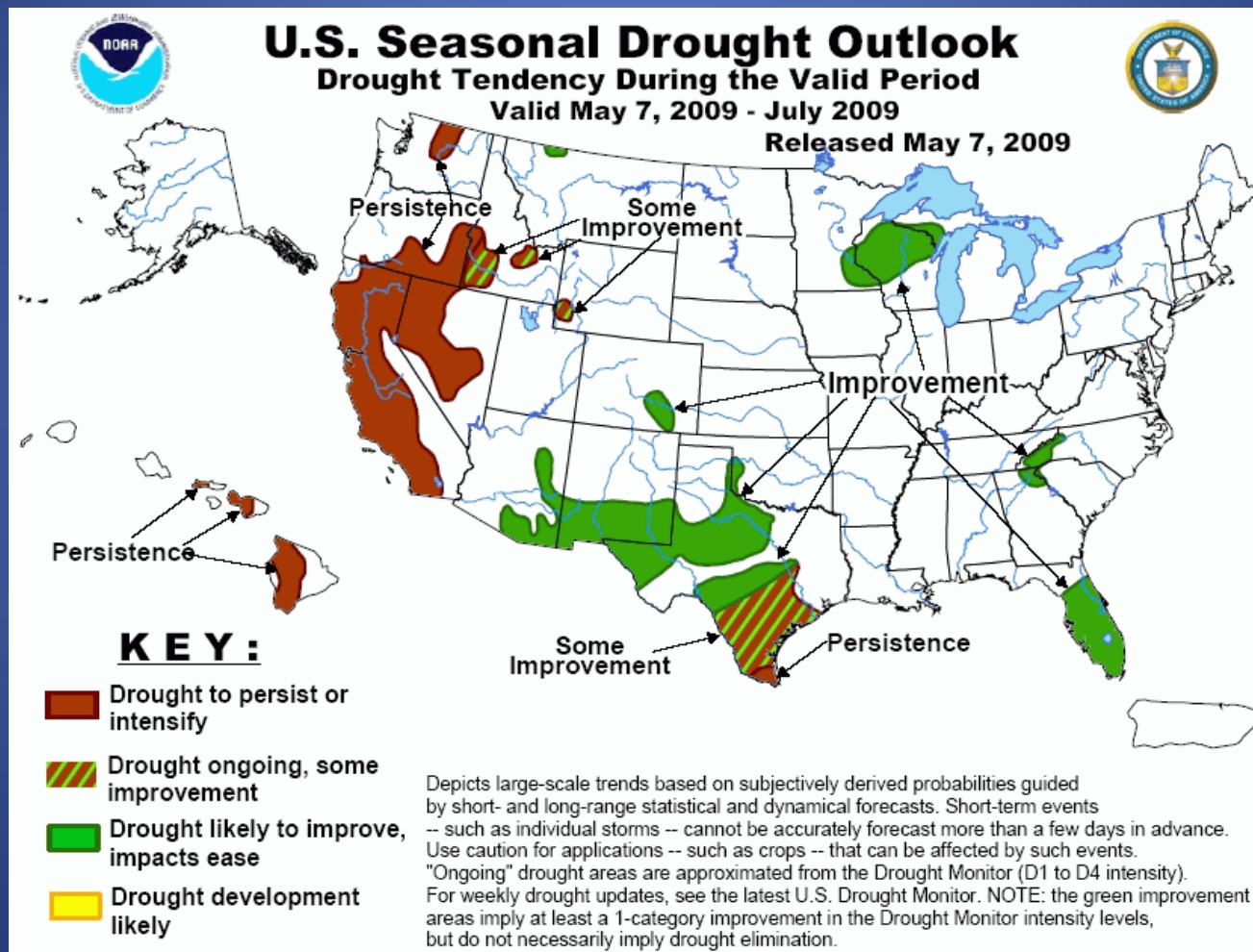
- Climate forecast system model predicts neutral ENSO conditions through 2009
- Ensemble mean forecast predicts El Nino conditions to develop
- CPC forecast keeps a neutral signal through the end of the 2009.

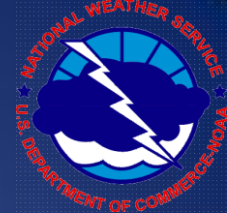
ENSO Model Forecast





NOAA Drought Outlook





Summary of Effects

Active monsoon season is predicted

- Near normal hurricane season is predicted in the Atlantic
- Above normal precipitation predicted across much of the Southwest U.S.
- These factors could increase the chance of heavy rainfall across the Rio Conchos Basin this summer